

CLAIMS

What is claimed is:

1           1.     A wireless network adapted with a plurality of  
2     access points and a station, comprising:  
3           an interconnect; and  
4           a wireless network switch coupled to the interconnect  
5     for communications with the plurality of access points,  
6     the wireless network switch to receive a DEAUTHENTICATION  
7     message sent by one of the plurality of access points in a  
8     coverage area of the station and to block communications  
9     between the plurality of access points and the station in  
10    response to determining that the DEAUTHENTICATION message  
11    is invalid.

1           2.     The wireless network of claim 1, wherein the  
2     DEAUTHENTICATION message is invalid upon determination  
3     that the DEAUTHENTICATION message originated from a source  
4     other than the wireless network switch.

1           3.     The wireless network of claim 1, wherein the  
2     wireless network switch to determine the DEAUTHENTICATION  
3     message is invalid by recovering a destination address of  
4     the DEAUTHENTICATION message and comparing the destination  
5     address with a list of destination addresses associated  
6     with valid DEAUTHENTICATION messages transmitted by the  
7     wireless network switch.

1           4.     The wireless network of claim 1, wherein the  
2     wireless network switch blocks communications between the  
3     plurality of access points and the station by signaling an  
4     access point currently associated with the station to

5 disassociate and denying subsequent request messages from  
6 the station on behalf of the plurality of access points.

1       5.    The wireless network of claim 4, wherein the  
2 request messages comprise any one of a PROBE REQUEST  
3 message, an ASSOCIATION REQUEST message and a  
4 REASSOCIATION REQUEST message.

1       6.    The wireless network of claim 4, wherein the  
2 wireless network switch denying subsequent request  
3 messages from the station for a prescribed period of time.

1       7.    A method for selectively associating with a  
2 station transmitting a first PROBE REQUEST message  
3 followed by a second PROBE REQUEST message under control  
4 of a wireless network switch, comprising:  
5       receiving a received signal strength indicator (RSSI)  
6 value corresponding to signal strength of the first PROBE  
7 REQUEST message detected by each access point;  
8       receiving a message identifying that the second PROBE  
9 REQUEST message has been detected; and  
10       responding only to the second PROBE REQUEST message  
11 on behalf of an access point selected to associate with  
12 the station using at least the RSSI value.

1       8.    The method of claim 7, wherein the message is  
2 the second PROBE REQUEST message.

1       9.    The method of claim 7, wherein prior to  
2 receiving the RSSI value, the method further comprises:  
3       generating the RSSI value of the first PROBE REQUEST  
4 message;  
5       loading the RSSI value into a field of the first  
6 PROBE REQUEST message to produce a modified PROBE REQUEST  
7 message; and

8           transferring the modified PROBE REQUEST message to  
9           the wireless network switch.

1           10. The method of claim 7 wherein prior to receiving  
2           the message, the method further comprises receiving load  
3           parameters from each access point detecting the first  
4           PROBE REQUEST message placing the load into a field of the  
5           modified PROBE REQUEST message.

1           11. The method of claim 7 wherein prior to receiving  
2           the RSSI value, the method further comprises:

3           generating the RSSI value of the first PROBE REQUEST  
4           message by each access point;

5           inserting the RSSI value into a first field of the  
6           first PROBE REQUEST message to produce a modified PROBE  
7           REQUEST message;

8           computing a load by each access point detecting the  
9           first PROBE REQUEST message;

10          inserting a load parameter into a second field of the  
11          modified PROBE REQUEST message; and

12          transferring the modified PROBE REQUEST message to  
13          the wireless network switch.

1           12. The method of claim 11 wherein the access point  
2           being selected based on the load parameter and the RSSI  
3           value.

1           13. A method comprising:

2           setting a plurality of received signal strength  
3           indicator (RSSI) thresholds including a first RSSI  
4           threshold and a second RSSI threshold having a value lower  
5           than the first RSSI threshold;

6           computing a RSSI value for a management message by a  
7           plurality of access points detecting the management

8 message, the management message originating from a  
9 station; and  
10 placing an address of the station into a list  
11 identifying stations located in a potential coverage hole  
12 if none of the plurality of access points computes a RSSI  
13 value of the management message above the second RSSI  
14 threshold.

1 14. The method of claim 13 further comprising  
2 removing the address of the station from the list if one  
3 of the plurality of access points computes a RSSI value of  
4 the management message above the first RSSI threshold.

1 15. The method of claim 13, wherein the first RSSI  
2 threshold is greater than or equal to 20 dbm0 and the  
3 second RSSI threshold is less than 20 dbm0.

1 16. The method of claim 13 further comprising  
2 initiating an event to mitigate a coverage hole at a  
3 location of the station if the station fails to complete  
4 association with any of the plurality of access points.

1 17. The method of claim 13 further comprising  
2 initiating an event to mitigate a coverage hole at a  
3 location of the station if the station continues to  
4 provide management messages with RSSI values below the  
5 second RSSI threshold.

1 18. A method comprising:  
2 receiving a PROBE REQUEST message on different  
3 channels by a plurality of access points, the PROBE  
4 REQUEST message being sent from a station;  
5 forwarding the PROBE REQUEST message from each of the  
6 plurality of access points, each PROBE REQUEST message  
7 includes a channel number and media access control (MAC)

8 address of an access point forwarding the PROBE REQUEST  
9 message;

10 creating a list including the MAC address of each of  
11 the plurality of access points and the corresponding  
12 channel number; and

13 providing the list to the station originally  
14 initiating the PROBE REQUEST message at completion of an  
15 association phase between the station and one of the  
16 plurality of access points.

1 19. The method of claim 18, wherein the forwarding  
2 of the PROBE REQUEST message is to a wireless network  
3 switch coupled to each of the plurality of access points  
4 over an interconnect.